

What is Claimed is:

- 1 1. A high strength detachable cylinder-to-plate joint comprising:
2 a connecting disk detachably attached to a base plate;
3 a cylinder having an annular end with an abutment surface; and
4 a threaded connection for detachably attaching the annular end
5 to the connecting disk so that the abutment surface abuts the
6 base plate.
- 1 2. The joint of claim 1, wherein the base plate comprises a table
2 top and the cylinder comprises a table leg.
- 1 3. The joint of claim 1, wherein the cylinder has first and second
2 annular ends each threadably connected to corresponding
3 connecting disks for forming a detachable joint between first
4 and second plates.
- 1 4. The joint of claim 3, wherein the cylinder first and second
2 annular ends are threaded in reverse direction to each other
3 and mate with reverse threaded plates such that connection
4 between the two plates can be made tight by turning the
5 cylinder in only one direction of rotation.
- 1 5. The joint of claim 1, wherein the annular end comprises a
2 sleeve having first and second ends wherein the first end
3 threadably receives the connecting disk and the second end
4 receives the cylinder.
- 1 6. The joint of claims 5, wherein the second end is threadably
2 attached to the cylinder.
- 1 7. The joint of claim 5, wherein the second end of the sleeve has
2 tapered walls mated to a corresponding tapered diameter end
3 of the cylinder.

- 1 8. The joint of claim 7, wherein the sleeve includes one or more
2 attachment bolts screwed into the tapered diameter end of the
3 cylinder.
- 1 9. The joint of claim 8, wherein the sleeve includes an integrally
2 formed disk for receiving the attaching bolts.
- 1 10. The joint of claim 8, wherein the sleeve includes a second
2 threadably connected disk for receiving the attaching bolts.
- 1 11. The joint of claim 1, wherein the plate is bolted between the
2 connecting disk and a second disk having a threaded outer
3 diameter.
- 1 12. The joint of claim 11, wherein the second disk is detachably
2 attached to an annular end of a second cylinder to form a
3 combination joint.
- 1 13. The joint of claim 1, wherein the connecting disk is attached by
2 spring loaded bolts.
- 1 14. The joint of claim 1, including a gasket between the base plate
2 and the cylinder abutment surface.
- 1 15. The joint of claim 5, wherein the sleeve has a variable diameter.
- 1 16. The joint of claim 1, including pins for limiting rotation of the
2 connecting disk.
- 1 17. A shelving system comprising successive shelves stacked
2 using multiple joints in accordance with claim 12.
- 1 18. Furniture comprising multiple joints in accordance with claim 3.
- 1 19. The joint of claim 5, wherein the sleeve comprises a square
2 stock having a cylindrical hole.

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